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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/888,338

06/22/2001

Anant Sahai

60021-0013

7231

7590

03/10/2005

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EXAMINER

VARTANIAN, HARRY

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/888,338	Applicant(s) SAHAI ET AL.	
	Examiner Harry Vartanian	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2002.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 14-17, 28-31, 39-41 and 62-65 is/are allowed.
6) ☒ Claim(s) 1, 10, 18, 24, 32 and 42 is/are rejected.
7) ☒ Claim(s) 2-9, 11-13, 19-23, 25-27, 33-38, and 43-61 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 22 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 210 and ALL OF FIGURE 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: Please fill in the appropriate application or patent numbers in paragraphs 5, 19, and 63 of the PG-PUB version.

Appropriate correction is required.

Claim Objections

3. Claims 8, 49-52, and 54-57 are objected to because of the following informalities: Claim 8 mentions "an approximate position of the receiver". There is no support in the specification for position measurements of the receiver. The same problem occurs in Claims 49-52. A simple fix would be to add the matter of Claim 8 to the specification. *Please be aware of possible new matter situations by adding any matter from Claims 49-52 to specification.* Claims 54-57 are objected to for being dependent on objected base Claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 18, 32 and 42 are rejected under 35 U.S.C. 102(a) as being anticipated by Stott et al(United States Patent# 6,137,847). Regarding Claim 1, Stott et al discloses a method of digital video acquisition using a synchronization system wherein:

"The timing synchronizer includes **a coarse synchronizer employing a subset of the data sample values** for providing a course timing synchronization, and **a fine synchronizer** for providing a fine synchronization **within a time period** determined by the coarse synchronization." (**abstract**)

In figure 9, Stott et al discloses that the received signal is sent through a correlator. Subsequently, the signal is sent through to the coarse and fine synchronization stages where coarse subset values are used for fine synchronization. Furthermore, Stott et al discloses that a range of delay values produced by the fine phase synchronization(see item 96 in figure 9) are used in the correlator for:

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"...for receiving the data sample values and including a delay having a time period delay equal to the active symbol period, and a multiplier for receiving the data symbol values and a version thereof delayed by the delay, to form a complex product signal, and a filter for filtering the complex product signal."**(abstract)**

The use of I and Q integrals is inherent in the correlation process of a sinusoidal radio signal.

Regarding Claim 18, the rejection for Claim 1 above also meets the limitations of the Claim. Estimating carrier frequency values is addressed in the abstract.

Regarding Claim 32, the rejection for Claim 1 above also meets the limitations of the Claim.

Regarding Claim 42, the rejection for Claim 1 above also meets the limitations of the Claim. The step of pre-processing a signal, such as Analog to Digital conversion, is shown in fig 3, item 20.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 10 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stott et al(United States Patent# 6,137,847). Stott et al meets all the limitations of the Claim except disclosing the use of the receiver for GPS. However, it would have been prima facie obvious to use fine and coarse phase acquisition in a GPS receiver since it was a well-known technique at the time of the invention. A motivation to combine is that it is an efficient way to quickly acquire phase in fast fading channels found in GPS systems.

Allowable Subject Matter

6. Claims 14-17, 28-31, 39-41, and 62-65 are allowed. Claims 14-15, 28-29, and 39 are allowable because the prior art failed to teach "selecting a delay value from the hypothesized range of delay values that correspond to a highest magnitude value that corresponds to the coarse-grained calculations of I and Q correlation integrals as an initial estimate of delay value" in combination with the other limitations of the Claim for delay estimation.

Regarding Claim 62, the prior art failed to teach "generating a parametric template representing correlation values associated with said received signal" in combination with the other limitations of the Claim for delay estimation.

7. Claims 2-9, 11-13, 19-23, 25-27, 33-38, and 43-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening Claims *-AND- the above objections are overcome.*

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 571.272.3048. The examiner can normally be reached on 10:00-6:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571.272.3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian
Examiner
Art Unit 2634

HV



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